

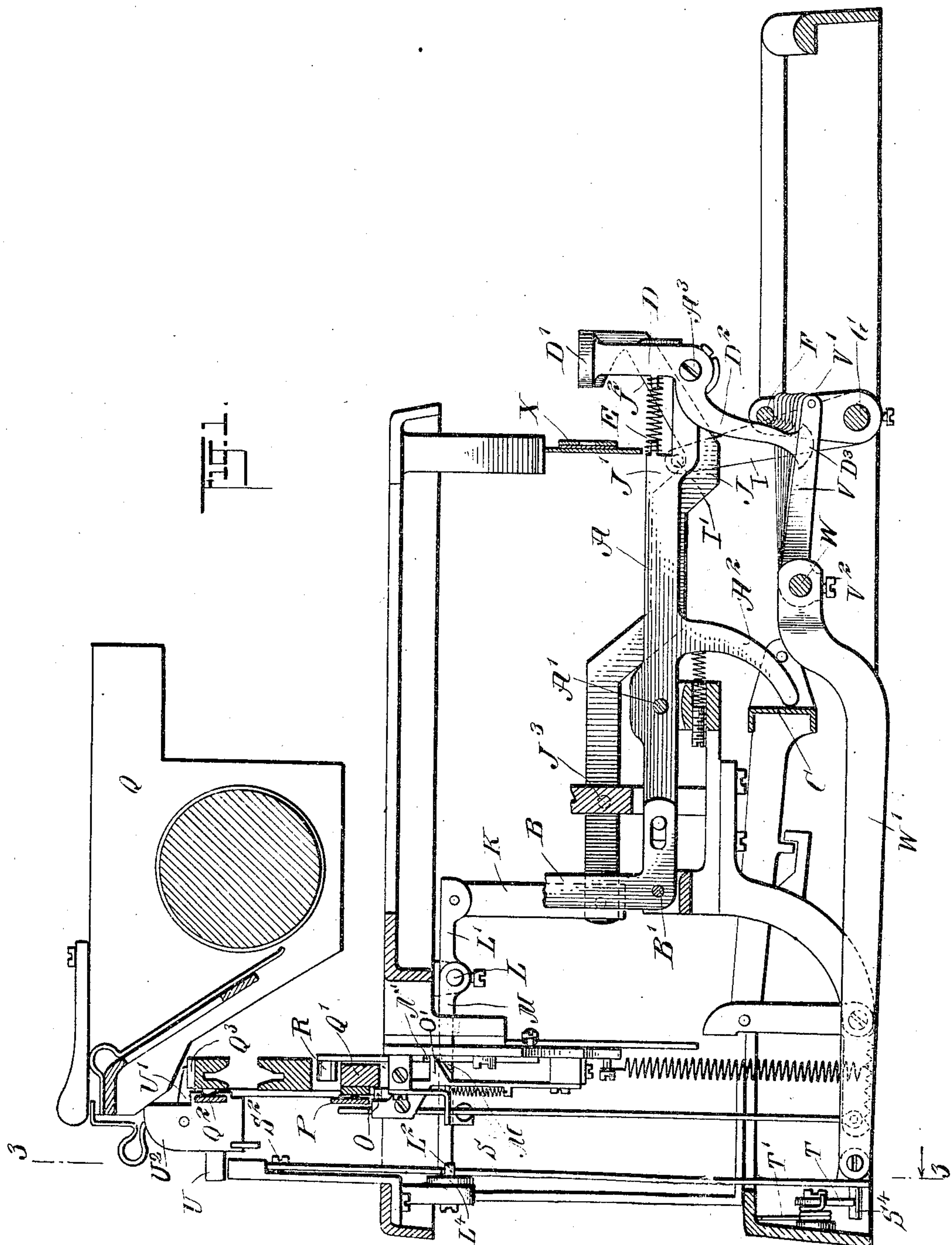
No. 848,274.

PATENTED MAR. 26, 1907.

F. X. WAGNER.  
TYPE WRITING MACHINE AND THE LIKE.

APPLICATION FILED JUNE 18, 1903.

3 SHEETS—SHEET 1



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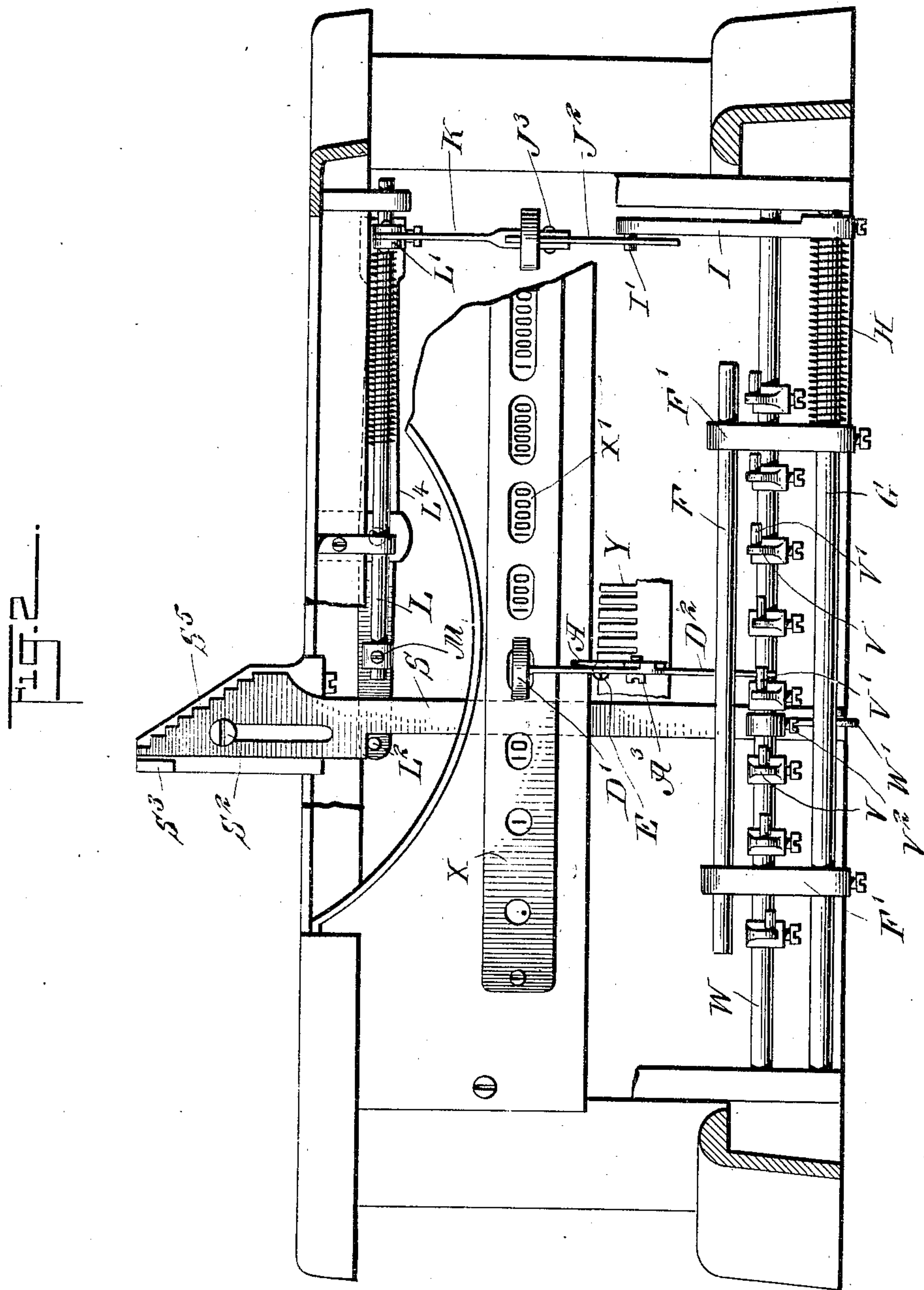
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3 SHEETS—SHEET 2.



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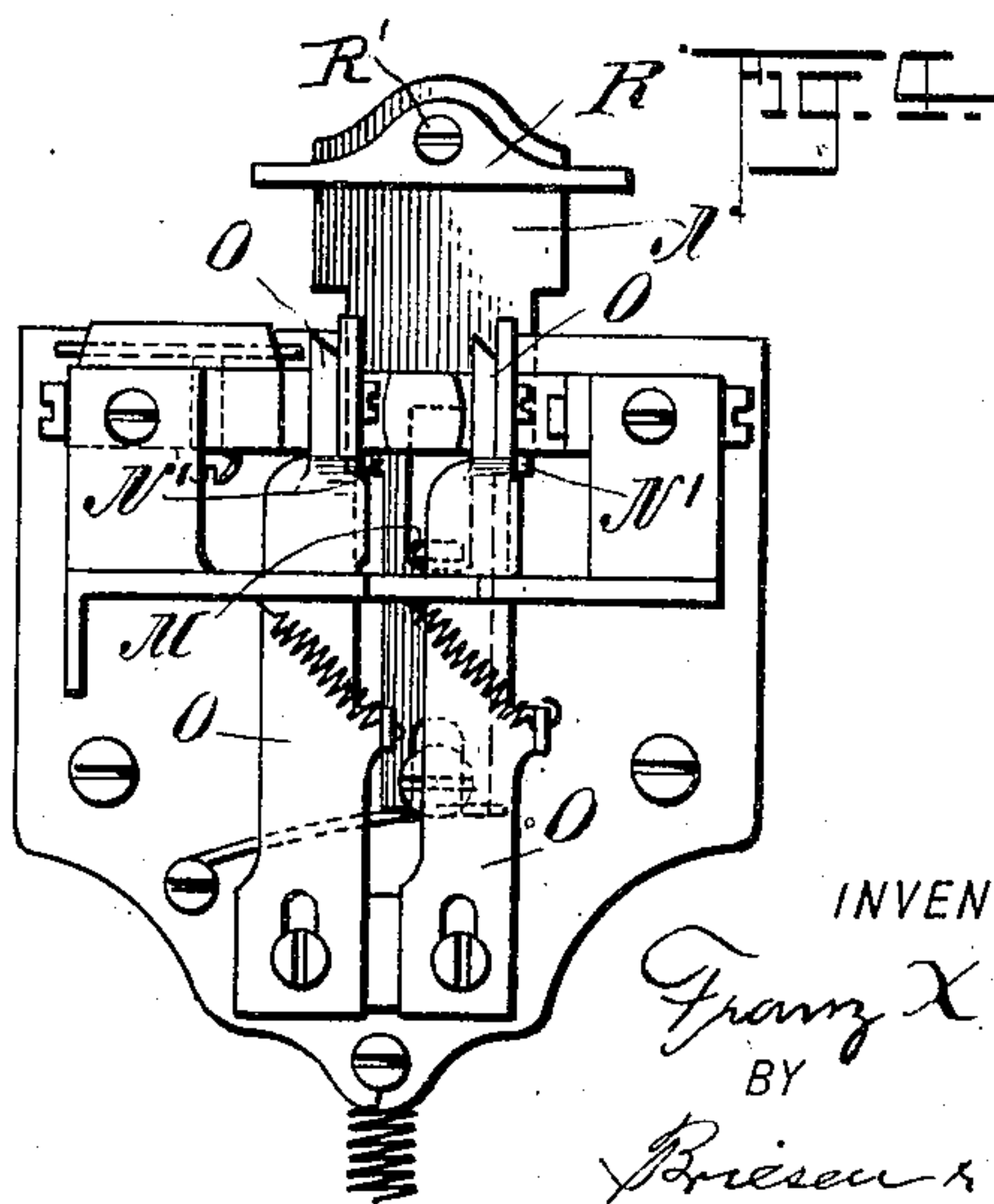
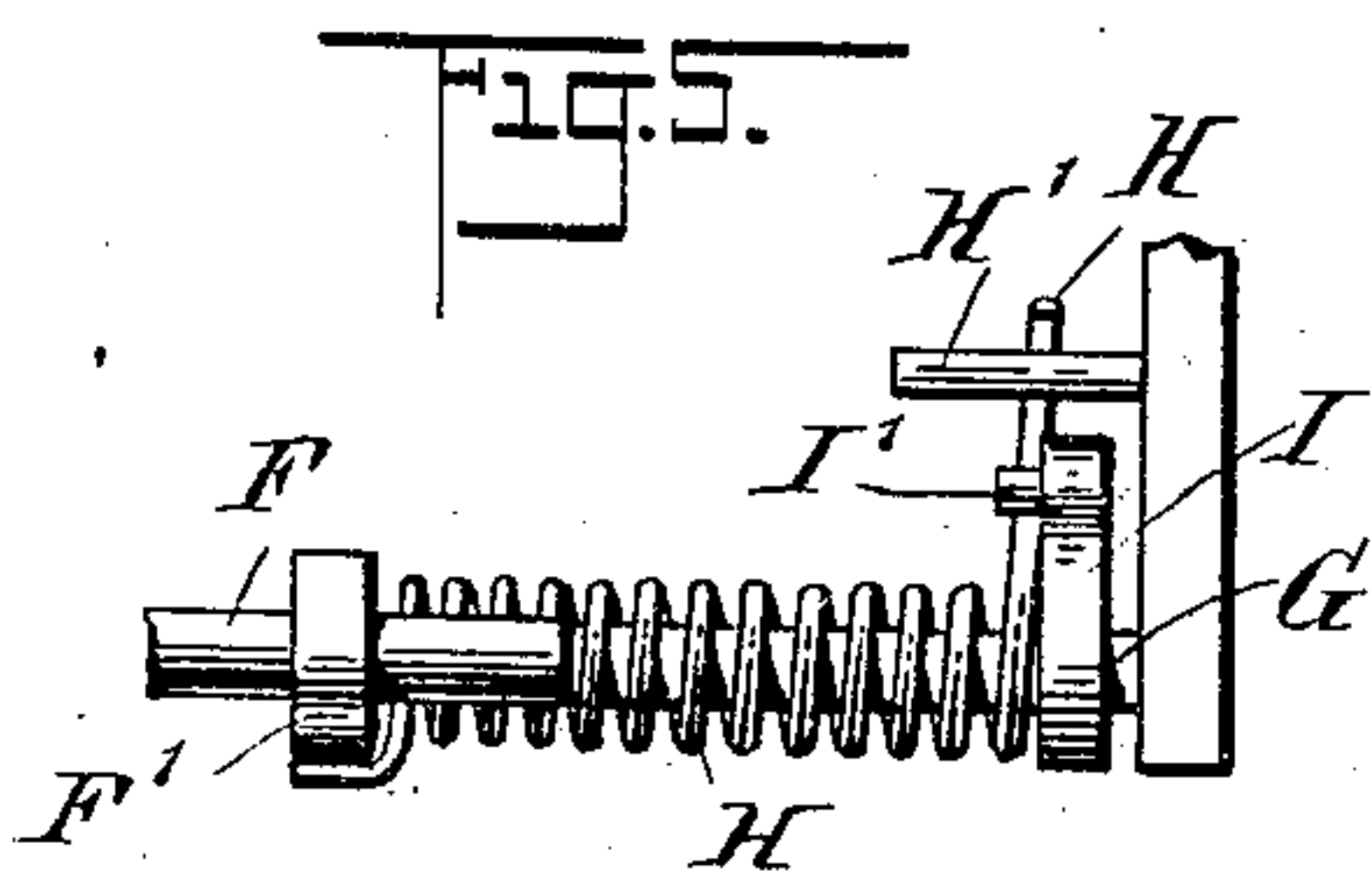
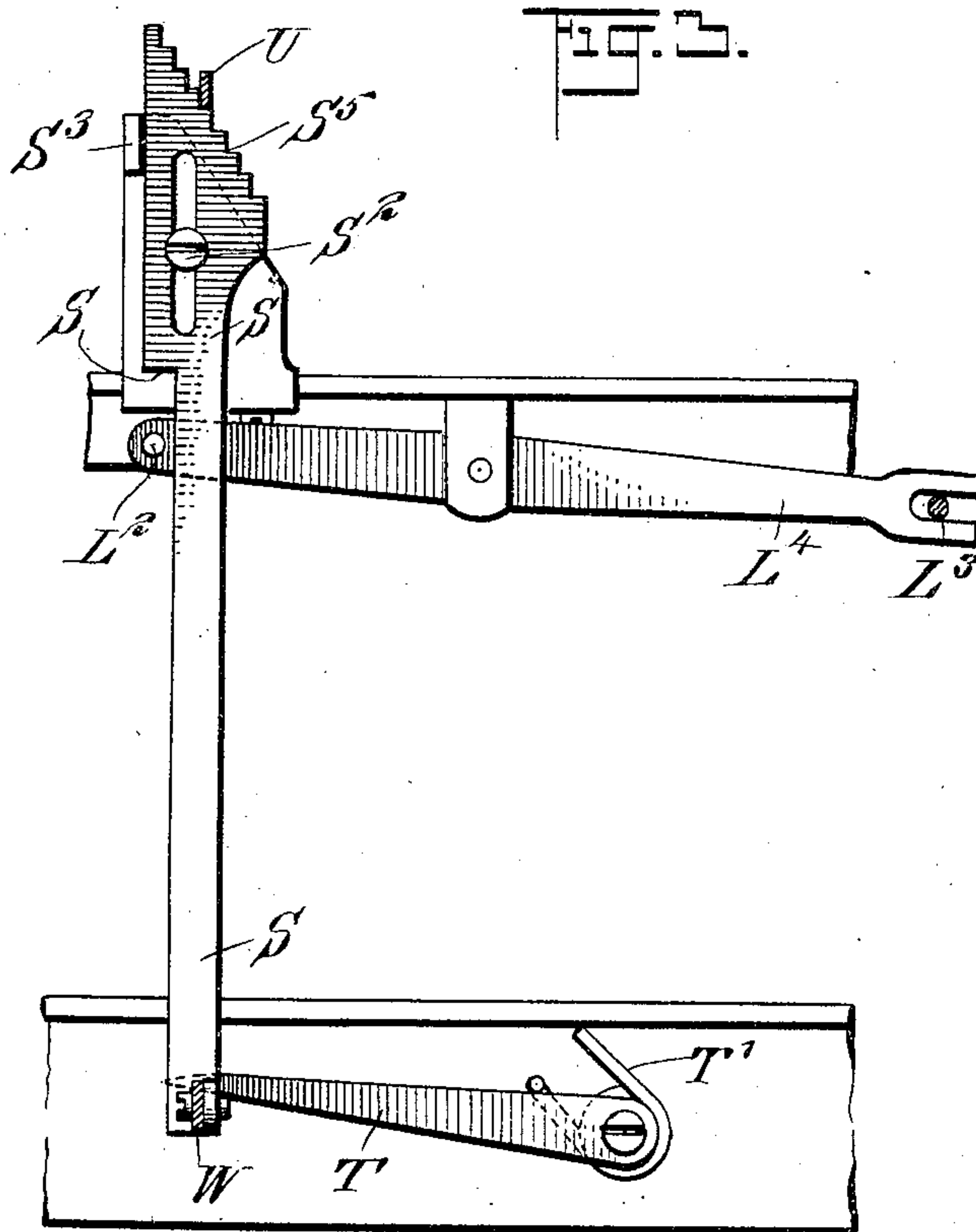
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

FRANZ X. WAGNER, OF NEW YORK, N. Y., ASSIGNOR TO UNDERWOOD TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## TYPE-WRITING MACHINE AND THE LIKE.

No. 848,274.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed June 18, 1903. Serial No. 162,027.

*To all whom it may concern:*

Be it known that I, FRANZ X. WAGNER, a citizen of the United States, and a resident of the borough of Bronx, city, county, and State of New York, have invented certain new and useful Improvements in Type-Writing Machines and the Like, of which the following is a specification.

My invention relates to type-writers and the like, and has for its object to provide improved mechanism by means of which the ordinary type-keys or printing-keys may be utilized for other purposes, such as the operation of a tabulating mechanism. The keys in my improved machine, therefore, have a double function, and by the improved construction hereinafter described I am enabled to provide a double-function key of great simplicity and efficiency.

In the accompanying drawings I have illustrated my invention as applied to the operation of a tabulating device.

Figure 1 is a sectional elevation of a portion of a type-writer provided with my improvement. Fig. 2 is a front elevation with parts broken away and some parts omitted, so as to better illustrate the main features of my invention. Fig. 3 is a detail front elevation of the tabulating-stop and certain parts connected therewith, the section being taken on line 3 3 of Fig. 1. Fig. 4 is a rear elevation of the escapement mechanism and adjacent parts, and Fig. 5 is a detail plan view of certain parts.

A designates one of those key-levers which belong to one of the double-function keys. This key-lever is fulcrumed on the frame of the machine at A' and has any suitable connection with any approved type mechanism, (not shown)—as, for instance, through the medium of an elbow-lever B, fulcrumed at B'. The key-lever also operates the escapement mechanism in any approved manner—for instance, through the medium of a universal bar C, engaged by a toe A<sup>2</sup>. At the front end of the key-lever is pivoted about a transverse axis A<sup>3</sup>, which therefore is parallel with the axis A', a key member D, carrying a key D' at its upper end. A spring E is provided for normally keeping the key member D in the forward position. (Shown in Fig. 1.) The key member D is arranged to be swung on the transverse axis A<sup>3</sup> toward the ma-

chine, the lower portion D<sup>2</sup> of the key member D being adapted to engage and to rock forwardly a rod F, which extends transversely of the machine and is carried by arms F', secured to a rock-shaft G, which a spring H (engaging a stationary pin H') tends to throw, so as to keep the rod F in engagement with the portion D<sup>2</sup> of the key member D. On the rock-shaft G is also secured a crank-arm I, provided with a pin I', extending over the ordinary tabulating-key J. In the normal position the pin I' lies in a depression J' of the tabulating-key. In front of the pin I' the key J is provided with an upwardly-inclined surface J<sup>2</sup>, on which said pin is adapted to ride, so as to swing the tabulating-key J about its fulcrum J<sup>3</sup>. This is done for the purpose of bringing about the release of the carriage—as, for instance, by the following means: The rear end of the tabulating-key lever is connected by a link K with an arm L' upon a rock-shaft L, supported at the rear portion of the machine. This rock-shaft is provided with an arm M, adapted to operate a carriage-release mechanism—that is, a device which temporarily frees the carriage from the escapement—so as to allow it to jump under the influence of the spring which propels the carriage. This release mechanism may be of any suitable construction and may consist of a frame N, having shoulders N', arranged to engage projections O', extending from the feed-dogs O, and to thus pull the feed-dogs out of engagement with the rack P on the carriage Q.

Preferably a brake R is combined with the release mechanism, so that such brake will be applied to a rail Q' of the carriage at the same time that the feed-dogs are brought out of engagement with the carriage-rack. The brake R is connected at R' to the frame N and is adapted to frictionally engage the upper surface of the rail Q' as the frame N is pulled down to disengage the feed-dogs from the feed-rack P.

The motion of the tabulating-key lever J and of the carriage-release mechanism actuated thereby is so timed that the carriage will not be released until the lever J is near the end of its movement, so that the adjustment or positioning of the tabulating-stop, presently to be described, will take place before the release of the carriage.



The arm  $L'$  has at its rear end a pivotal connection  $L^3$  with a transverse lever  $L^4$ , extending adjacent to a tabulating-stop  $S$  and provided with a pin  $L^2$ , adapted to engage a shoulder  $S'$  on said stop. The tabulating-stop has vertical movement and is guided by means of a screw  $S^2$  and a lug  $S^3$ , which also forms an abutment to brace the stop when the carriage is thrown against it. The lower end of the stop is provided with a pin  $S^4$ , against which bears an arm  $T$ , pressed downward by a spring  $T'$ , so as to normally keep the tabulating-stop in its lower position. In such position the stop does not project above the lug  $S^3$ . The upper end of the stop is formed with a stepped surface  $S^5$ , facing in the direction from which the carriage comes during its tabulating movement. The steps are so arranged that the horizontal distance between their vertical surfaces corresponds to letter-spaces. This movable tabulating-stop is adapted to cooperate with any suitable projection on the carriage  $Q$ —as, for instance, a stop  $U$ , secured to or forming part of a sliding member  $U^2$ , provided with lugs. These lugs are arranged to partially embrace a bar or rail  $Q^2$ , which extends either wholly or partly across the width of the machine. The said sliding member and stop  $U$  are adjustable along the bar or rail  $Q^2$  and are adapted to be locked in position by means of a tooth  $U'$ , pivoted to the sliding member  $U^2$ , which tooth  $U'$  engages a rack  $Q^3$  on the carriage. It will be understood that according as the tabulating-stop  $S$  is raised more or less it will stop the carriage at different points. The amount by which said stop is raised by the simple depression of the tabulating-key  $J$  corresponds, for instance, to the position at which the period is placed when writing decimal fractions. In order that the stop may be moved to other denominational positions, I have provided the following mechanism, which is operated by the movement of the key members  $D$ , it being understood that in practice the machine will comprise a plurality of such members, although only one of them has been shown in the drawings. The lower portions  $D^2$  of these key members are provided with inclines or cam portions  $D^3$ , adapted to engage and depress pins  $V'$ , projected from arms  $V$ , which are held on a rock-shaft  $W$  by means of set-screws  $V^2$ . These arms  $V$  are differently set on the rock-shaft  $W$  in a stepwise fashion, as shown best in Fig. 2. The key members  $D$  are all supposed to be placed in the same position on the corresponding type-keys.

Of course the cam portions  $D^3$  must be made to properly engage the corresponding pins, and for this purpose the said cam portions may be made of varying length, as shown in Fig. 1, or all cam portions may be made like the longest cam portion shown in said figure. In the first instance the pins  $V'$

are arranged in alinement when looking from the top, while in the second instance, if all the cam portions are alike, the pins  $V'$  must be arranged in staggered fashion when viewed in plan.

It will be readily understood that if equal angular movements are given to the several key members  $D$  such movements will impart different angular movements to the rock-shaft  $W$ , as each key member  $D$  will move independently for some time before it strikes the corresponding pin  $V'$ , and the extent of such independent movement will vary for each of the arms  $V$ . The rock-shaft  $W$  is connected by an arm  $W'$  with the tabulating-stop  $S$ . The parts are so dimensioned that the amount of movement given to the tabulating-stop  $S$  by the operation of any one of the key members  $D$  will be greater than the movement produced by a depression of the tabulating-key  $J$ . A scale  $X$ , provided with suitable indications  $X'$ , will be located in front of the machine to designate the denominational positions to which the carriage will jump upon the operation of the several key members  $D$ . In Fig. 2 I have indicated at  $Y$  a notched guide for receiving the key-levers  $A$  and limiting their movement. This guide is located at the front portion of the machine.

It is to be understood that when it is desired to operate the impression mechanism, or, in other words, the type-bar, the key  $D'$  is depressed in the usual manner. During this depression of the said key  $D'$  the portion  $D^2$  of the key member  $D$  does not affect the rod  $F$  or the parts connected with said rod.

I claim as my invention—

1. In a type-writer or the like, a lever, a key member carried by said lever and movable toward and from the fulcrum thereof, impression mechanism operated by the movement of said lever, and tabulating mechanism operated by moving the key member toward the fulcrum of the lever.

2. In a tabulating device, a series of key members, mounted to rock about horizontal axes, and provided with downward extensions, a rock-shaft extending parallel with the axes of said key members, a series of arms mounted on said shaft and provided with pins at different distances from the respective key-member extensions, which are adapted to engage said pins, and stop devices comprising a stop connected with said rock-shaft and adjustable to different denominational positions according to the movement of said shaft.

3. In a tabulating device, a series of key members mounted to rock about horizontal axes, and provided with downward extensions, a rock-shaft extending parallel with the axes of said key members, a series of arms mounted on said shaft and provided with pins at different distances from the respective key-member extensions which are adapted



ed to engage said pins, a carriage-release device operated by the rocking movement of any one of said key members, and stop devices comprising a stop connected with said rock-shaft and adjustable to different denominational positions according to the movement of said shaft.

4. In a tabulating device, stop devices comprising a stop adjustable to different denominational positions, a tabulating-key for throwing said stop to its chief or column-stop position, a carriage-release device connected with said tabulating-key, a series of pivoted keys for moving said stop to different denominational positions, and mechanism operated by the pivotal movement of any one of said series of keys, for transmitting such movement to the tabulating-key and through its medium to the carriage-release mechanism.

5. In a type-writer, a series of impression-key levers, key members pivoted thereto, and stop devices comprising a stop adjustable to different denominational positions by the pivotal movement of the key members relatively to the said levers.

6. In a type-writer or like machine, a lever, impression mechanism operated by the movement of said lever, a key member pivoted to said lever, and tabulating mechanism operated by the pivotal movement of the key member relatively to the lever.

7. In a type-writer or like machine, a lever, a key member pivoted thereto, impression mechanism operated by the movement of said lever, carriage-feed mechanism also operated by the said movement of the lever, and spacing mechanism for moving the carriage in a manner different from that effected by the carriage-feed mechanism, said spacing mechanism being operated by the pivotal movement of the key member relatively to the lever.

8. In a type-writer or like machine, a lever, a key member carried by said lever and movable toward and from the fulcrum thereof, impression mechanism operated by the movement of said lever, carriage-feed mechanism also operated by the movement of said lever at the same time that the impression mechanism is operated, and spacing mechanism for moving the carriage in a manner different from that of the carriage-feed mechanism, said spacing mechanism being operated by moving the key member toward the fulcrum of the lever.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANZ X. WAGNER.

Witnesses:

EUGENE EBLE,

HERMAN L. WAGNER.